

**Section I: (Amendments to the Specification)**

Please amend the specification as set out below.

1. Please replace original paragraphs [0075] through [0077] of the specification with the following new replacement paragraphs [0075] through [0077]:

[0075] The interstices between the microtubular elements 36 at their shell sides are filled with a sorbent material 38 having sorptive affinity for the target gas for sorptively carrying the same. Such sorbent material 38 is limited only to the body portion 32B of the housing 32, by the potting member 33, and the tubular walls and the enclosed ends of the microtubular elements 36, and therefore will not enter into the headspace ~~[[32B]]~~ 32A in the event that the housing 32 is turned upside down.

[0076] The target gas that is sorptively carried by the sorbent material 38 can diffuse from such sorbent material in the body portion 32B through the tubular walls of the microtubular elements 36 into the bore sides thereof, as shown in FIG. 3B, which can subsequently enter into the headspace ~~[[32B]]~~ 32A and be dispensed from the valve head 34 for downstream usage. The sorbent material 38 is advantageously kept in the body portion 32B and will not enter into either the bore sides of the microtubular elements 36 or the headspace ~~[[32B]]~~ 32A to block the gas passages, regardless of the direction in which the housing 32 is placed, i.e., either upstanding, upside-down, or reclined.

[0077] Moreover, when the sorbent material 38 is exhausted, it can be recharged with the target gas, by connecting the valve head 34 to a target gas source, and pressure can be applied so as to enhance the speed of such recharging process. The recharged target gas enters into the headspace ~~[[32B]]~~ 32A from the valve head 34, and then into the bore sides of the microtubular elements 36. The porous, gas-permeable tubular walls of the microtubular elements 36 provide increased diffusion surface to allow diffusion of the recharged target gas from the bore sides of the microtubular elements 36 into the sorbent material 38 at the shell sides therethrough, as shown in FIG. 3C.

2. Please replace original paragraphs [0083] and [0084] with the following new replacement paragraphs [0083] and [0084]:

[0083] The interstices between the microtubular elements 46 at their shell sides in the body portion 42B are filled with a liquid carrier material 48 that carries the target gas. Such liquid carrier material 48 is limited only to the body portion 42B of the housing 42, by the potting member 43, and the liquid-impermeable tubular walls, and the enclosed ends of the microtubular elements 46, and therefore will not leak into the headspace [[42B]] 42A in the event that the housing 42 is turned upside down.

[0084] The target gas that is carried by the liquid carrier material 48 can be released therefrom through the gas-permeable tubular walls of the microtubular elements 46 into the bore sides thereof, as shown in FIG. 4B, which can subsequently enter into the headspace [[42B]] 42A and be dispensed from the valve head 44 for downstream usage. The liquid carrier materials 48, however, is kept in the body portion 42B and will not leak into either the bore sides of the microtubular elements 46 or the headspace [[42B]] 42A regardless of the direction in which the housing 42 is placed.

3. Please replace original paragraphs [0095] and [0096] with the following new replacement paragraphs [0095] and [0096]:

[0095] FIG. 6A shows an individual microtubular element as immersed in the liquid hydrogen carrier [[54]] 53. Such microtubular element comprises a single-layer tubular wall 56' made of a gas-permeable and liquid-impermeable material, which is preferably a microporous, hydrophobic polymeric material selected from the group consisting of polypropylenes, polyethylenes, polyurethanes, polymethylpentenes, polytetrafluoroethylenes, etc. Hydrogen gas 64 can diffuse through the tubular wall 56' of such microtubular element and enter into the bore side thereof, while the liquid hydrogen carrier 53 cannot and therefore is limited only to the shell side thereof.

[0096] FIG 6B shows another individual microtubular element as immersed in the liquid hydrogen carrier [[54]] 53 which comprises a double-layer tubular wall having an outer layer 56'' made of a structural material that is both gas- and liquid-permeable, and an inner layer 57 made of a membrane material that is gas-permeable but liquid-impermeable.

Please replace original paragraph [0148] with the following new replacement paragraph [0148]:

[0148] The hydrogen carrier material can alternatively be stored at the shell side of the microfibrinous fuel cells. FIG. 17 shows a compact fuel cell assembly [[260]] 280 that comprises a bed of hydrogen-sorbent

material [[263]] 283 and multiple microfibrinous fuel cells [[264]] 284 dispersed therein. Hydrogen gas is supplied by such bed of hydrogen-sorbent material [[263]] 283 at the shell side of each microfibrinous fuel cell, while an oxidant, such as oxygen gas or air, can be supplied through a lumen at the bore side of each microfibrinous fuel cell.